

FIG. 2

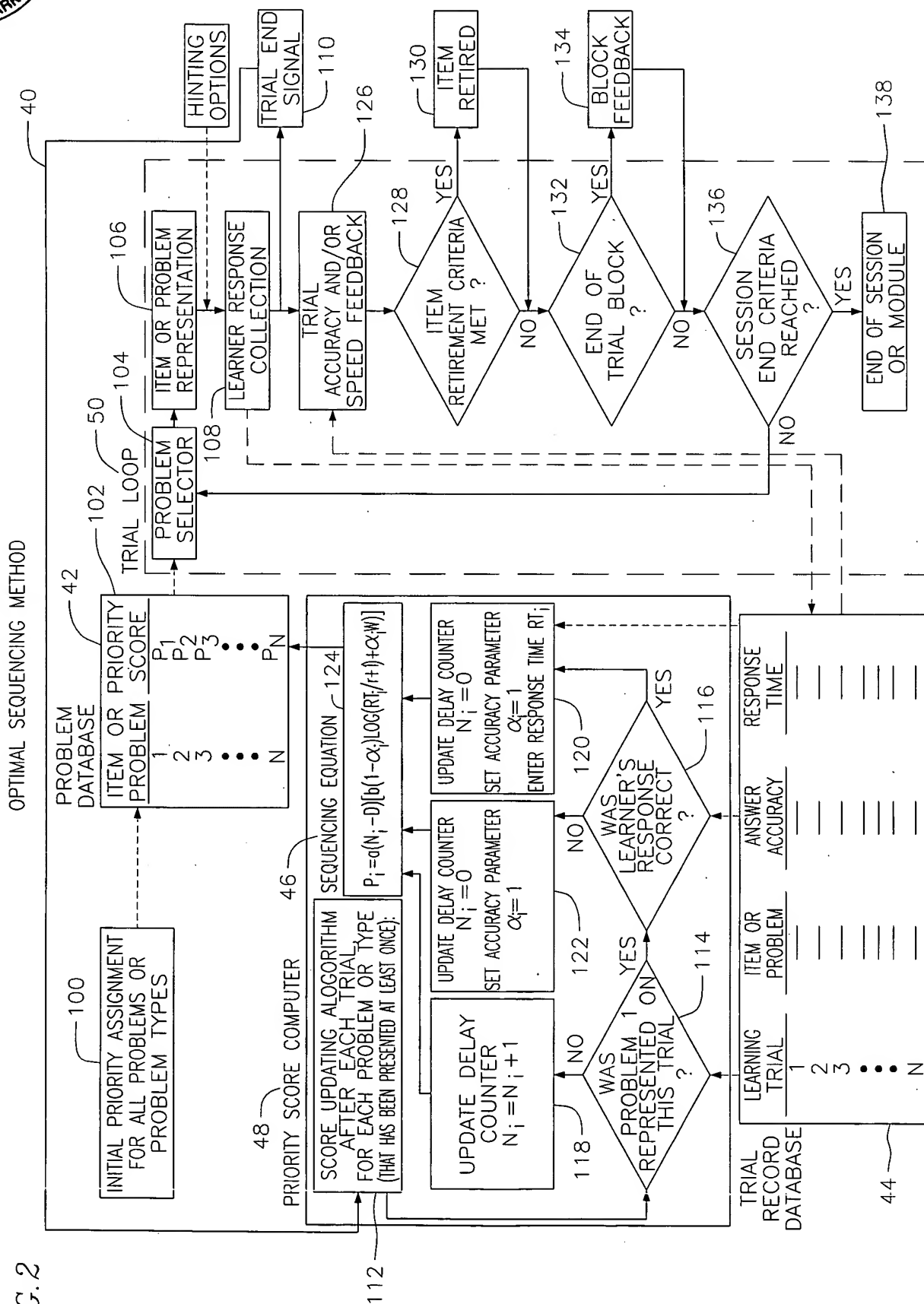




FIG. 3

TABLE 1

RESPONSE

TRIAL	PROBLEM	RESPONSE	ACCURACY	TIME(SEC)	COMMENT
1	7X7=	"49"	CORRECT	3.5	FAST, CORRECT RESPONSE.
2	6X7=	"38"	WRONG	--	INCORRECT RESPONSE.
3	7X4=	"28"	CORRECT	18.4	CORRECT BUT SLOW.
4	12X7=	"72"	WRONG	--	
5	6X7=	"42"	CORRECT	11.7	RECURRENCE OF PROBLEM MISSED ON TRIAL 2.
6	9X9=	"72"	WRONG	--	
7	12X7=	"84"	CORRECT	10.4	RECURRENCE OF PROBLEM MISSED ON TRIAL 4.
8	5X8=	"40"	CORRECT	2.6	
9	9X9=	"80"	WRONG	--	
10	7X4=	"28"	CORRECT	6.1	RECURRENCE OF PROBLEM ANSWERED SLOWLY ON TRIAL 3.
11	6X3=	"18"	CORRECT	4.8	
12	9X9=	"74"	WRONG	--	RECURRENCE OF PROBLEM MISSED ON TRIAL 9.
13	3X4=	"12"	CORRECT	2.4	
14	6X7=	"32"	WRONG	--	RECURRENCE OF PROBLEM ANSWERED SLOWLY ON TRIAL 5.
15	9X9=	"81"	CORRECT	4.5	RECURRENCE OF PROBLEM MISSED ON TRIAL 12.
16	7X7=	"49"	CORRECT	2.7	RECURRENCE OF PROBLEM ANSWERED QUICKLY ON TRIAL 1.
17	12X7=	"84"	CORRECT	6.2	RECURRENCE OF PROBLEM ANSWERED SLOWLY ON TRIAL 7.
18	6X7=	"42"	CORRECT	5.1	RECURRENCE OF PROBLEM MISSED ON TRIAL 14.
19	3X10=	"30"	CORRECT	3.2	
20	7X4=	"28"	CORRECT	3.9	RECURRENCE OF TRIAL 10 PROBLEM.

SAMPLE SEQUENCE OF TRIALS USING THE SEQUENCING ALGORITHM. RELEVANT PARAMETER VALUES: $\alpha=1$, $b=2$, $D=2$, $W=12$, $K=1$. ARROWS INDICATE SELECTED EXAMPLES OF PROBLEM RECURRENCES. (SEE TEXT.)



FIG. 4

PROBLEM	TRIAL																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
7X7=	①	-.088	0	.088	.176	.264	.352	.44	.528	.616	.704	.792	.88	.096	1.06	①.14	.075	.151	.226	.30
6X7=	1	①	-1.2	0	①.2	-.148	0	.148	.296	.444	.592	.74	.888	①.04	-1.2	0	.12	②.4	.11	.22
7X4=	1	1	①	-2	0	.202	.404	.606	.808	①.01	-.129	0	.129	.258	.387	.516	.645	.774	.903	①.03
12X7=	1	1	1	①	-1.2	0	①.2	-.158	0	.158	.316	.474	.632	.79	.948	1.10	①.26	.123	.245	.358
9X9=	1	1	1	1	1	①	-1.2	0	①.2	-1.2	0	①.2	-1.2	0	①.2	.102	.204	.307	.409	.511
5X8=	1	1	1	1	1	1	1	①	.07	.14	.21	.28	.35	.42	.49	.56	.63	.70	.77	.85
6X3=	1	1	1	1	1	1	1	1	1	1	①	.106	.212	.318	.424	.530	.636	.742	.848	.954
3X4=	1	1	1	1	1	1	1	1	1	1	1	1	①	.068	.137	.205	.273	.341	.409	.477
3X10=	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	①	.083
8X4=	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4X12=	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3X9=	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8X7=	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
11X5=	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
6X8=	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
⋮																				

PRIORITY SCORES BY TRIAL FOR SAMPLE SEQUENCE IN FIGURE 3. COLUMNS INDICATE TRIALS; ROWS SHOW A PARTIAL LIST OF PROBLEMS IN THE DATABASE. CIRCLED PRIORITY SCORES INDICATE THE PROBLEM CHOSEN BY THE ALGORITHM FOR THAT TRIAL. PARAMETER VALUES: $\alpha=.1$; $b=2$; $W=12$; $D=2$; $k=1$; $r=2$.



FIG. 5

TRIAL	PROBLEM	RESPONSE		COMMENT
		RESPONSE	ACCURACY TIME(SEC)	
1	CAMINO	"ROAD"	CORRECT	3.5
2	MARTES	"MARCH"	WRONG	—
3	DOS	"TWO"	CORRECT	18.4
4	VERDE	"DON'T KNOW"	WRONG	—
5	ANARANJADO	"ANGEL"	WRONG	—
6	MARTES	"TUESDAY"	CORRECT	15.0
7	ABRIL	"APRIL"	CORRECT	10.4
8	FACIL	"EASY"	CORRECT	2.6
9	VERDE	"GREEN"	CORRECT	9.7
10	ANARANJADO	"APPLE"	WRONG	—
11	VIERNES	"FRIDAY"	CORRECT	4.8
12	AZUL	"BLUE"	WRONG	—
13	DOS	"TWO"	CORRECT	2.4
14	NOVIEMBRE	"NOVEMBER"	CORRECT	8.6
15	ANARANJADO	"ORANGE"	CORRECT	11.3
16	CERO	"ZERO"	CORRECT	2.7
17	CAMINO	"ROAD"	CORRECT	6.2
18	MARTES	"TUESDAY"	CORRECT	5.1
19	HIJA	"DAUGHTER"	CORRECT	3.2
20	EMPUJAR	"ORANGE"	WRONG	—

SAMPLE SEQUENCE OF TRIALS USING THE SEQUENCING ALGORITHM WITH PARAMETERS SET TO FAVOR INTRODUCTION OF

NEW PROBLEMS: $\alpha=1$, $b=1.5$, $D=2$, $r=2$, $W=6$, $K=1.2$



FIG. 6

PROBLEM	TRIAL																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CAMINO	1.2	-0.9	0	.09	.18	.27	.37	.46	.55	.64	.73	.82	.92	1.01	1.1	1.19	1.28	-.09	0	.09
MARTES	1.2	1.2	-0.6	0	0.6	1.2	-0.14	0	.14	.28	.42	.56	.70	.84	.98	1.11	1.25	1.39	-.08	0
DOS	1.2	1.2	1.2	-0.16	0	.16	.32	.49	.65	.81	.97	1.13	1.3	-.12	0	.12	.25	.37	.49	.61
VERDE	1.2	1.2	1.2	1.2	-0.6	0	.6	1.2	1.8	-0.12	0	-0.12	.23	.345	.46	.58	.69	.81	.92	1.04
ANARANJADO	1.2	1.2	1.2	1.2	1.2	-0.6	0	.6	1.2	1.8	-0.6	0	.6	1.2	1.8	-.12	0	.12	.25	.37
ABRIL	1.2	1.2	1.2	1.2	1.2	1.2	1.2	-0.08	0	0.8	.17	.25	.34	.42	.51	.59	.68	.76	.85	.93
FACIL	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	-0.9	0	0.9	.18	.27	.37	.46	.55	.64	.73	.82	.92
VIERNES	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	-0.16	0	.16	.33	.49	.66	.82	.99	1.15
AZUL	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	-0.7	0	.07	.13	.20	.26	.33	.40
NOVIEMBRE	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	-.11	0	.11	.22	.33	.44
CERO	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	-0.9	0	0.9	.19
HUJA	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	-0.6
EMPUJAR	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
AMARILLO	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
LUNES	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
ROSADO	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2

PRIORITY SCORES BY TRIAL FOR SAMPLE SEQUENCE IN FIGURE 5. COLUMNS INDICATE TRIALS;
ROWS SHOW A PARTIAL LIST OF PROBLEMS IN THE DATABASE. CIRCLED PRIORITY SCORES INDICATE
THE PROBLEM CHOSEN BY THE ALGORITHM FOR THAT TRIAL. PARAMETER VALUES: $a=.1$; $b=1.5$;
 $W=6$; $D=2$; $k=1.2$; $r=2$.

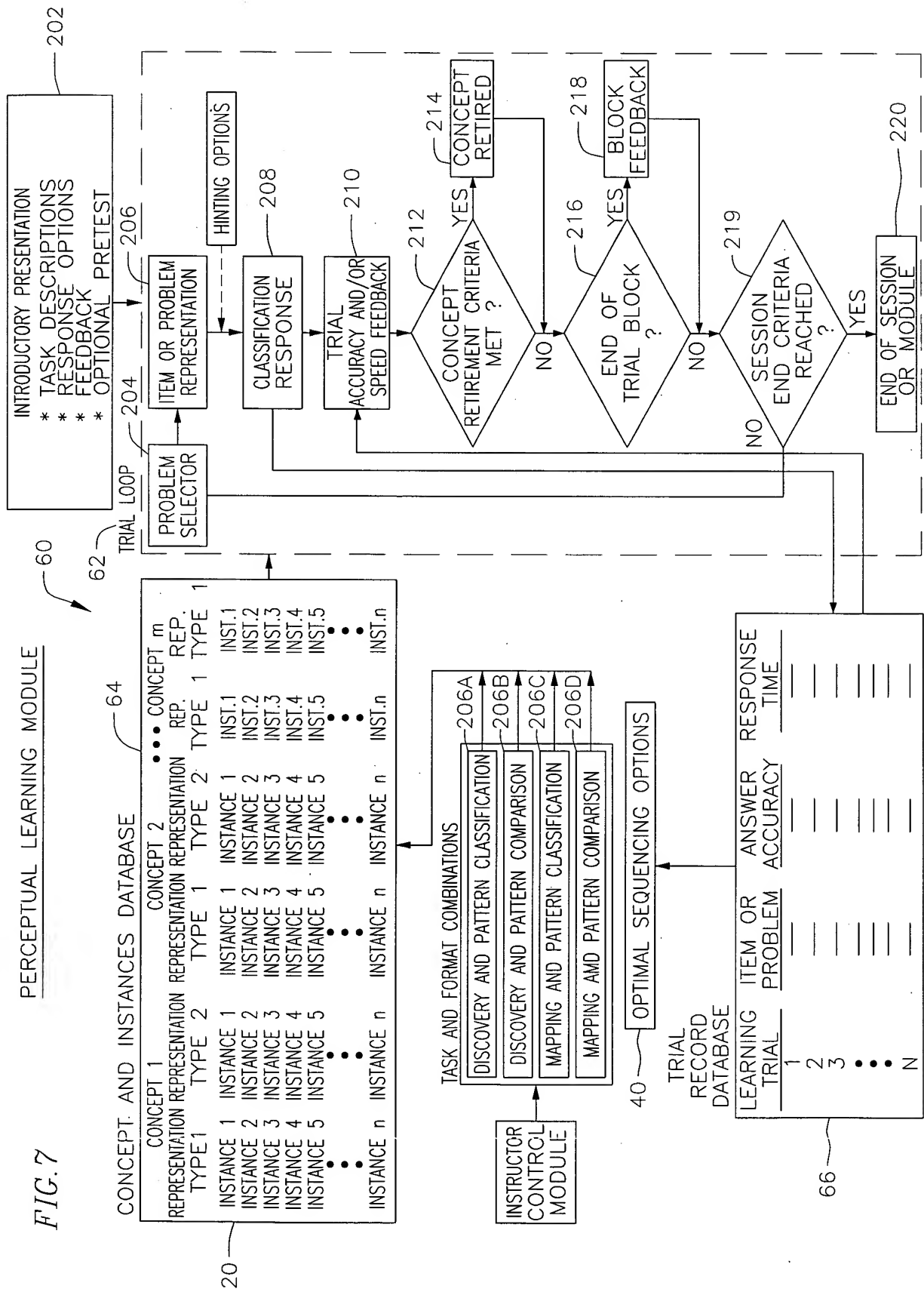


FIG. 8
 PERCEPTUAL LEARNING SYSTEM:
 STRUCTURAL DISCOVERY VARIANT

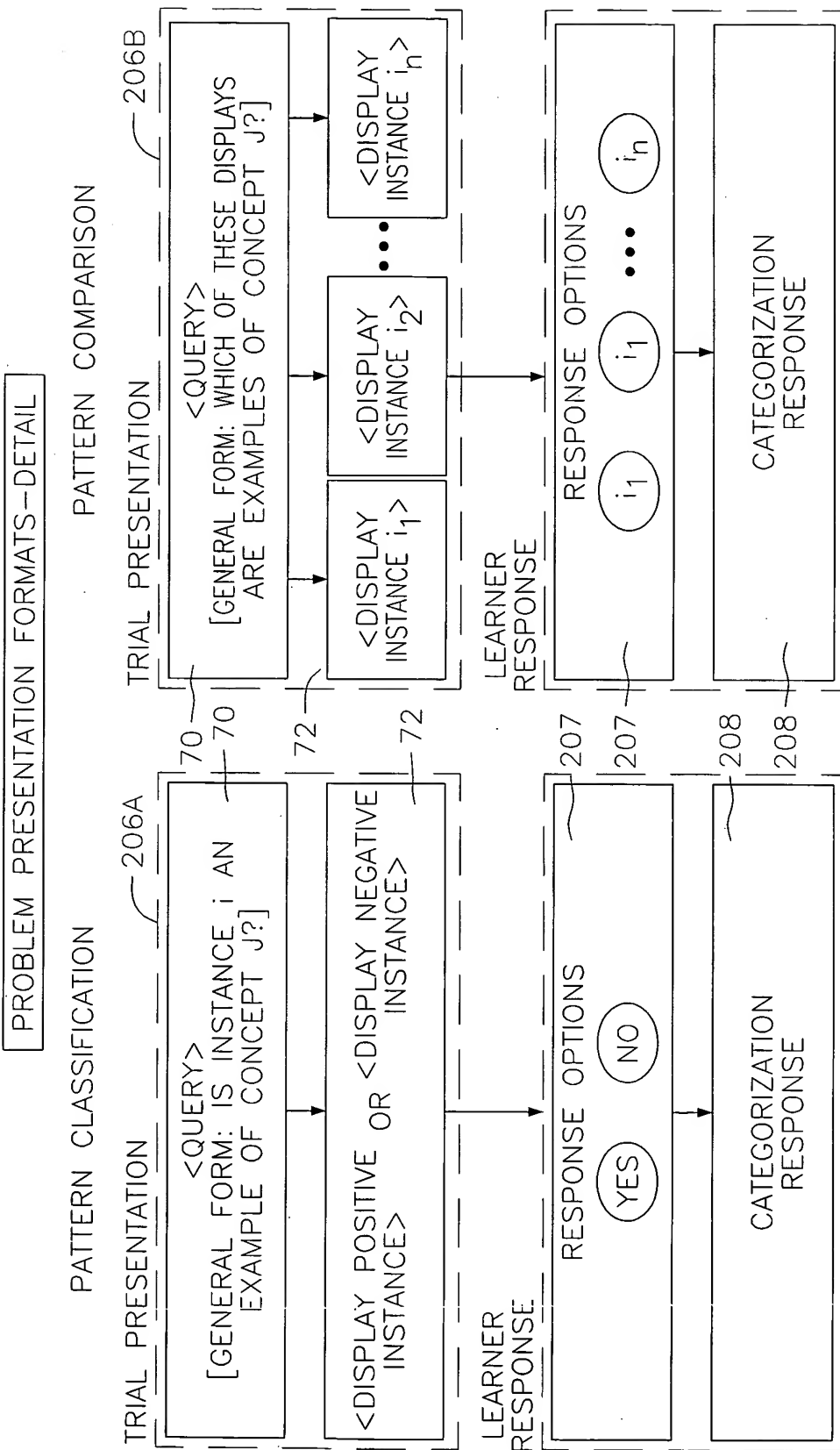
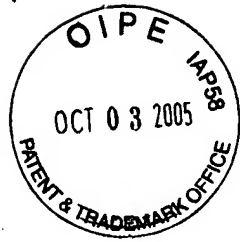
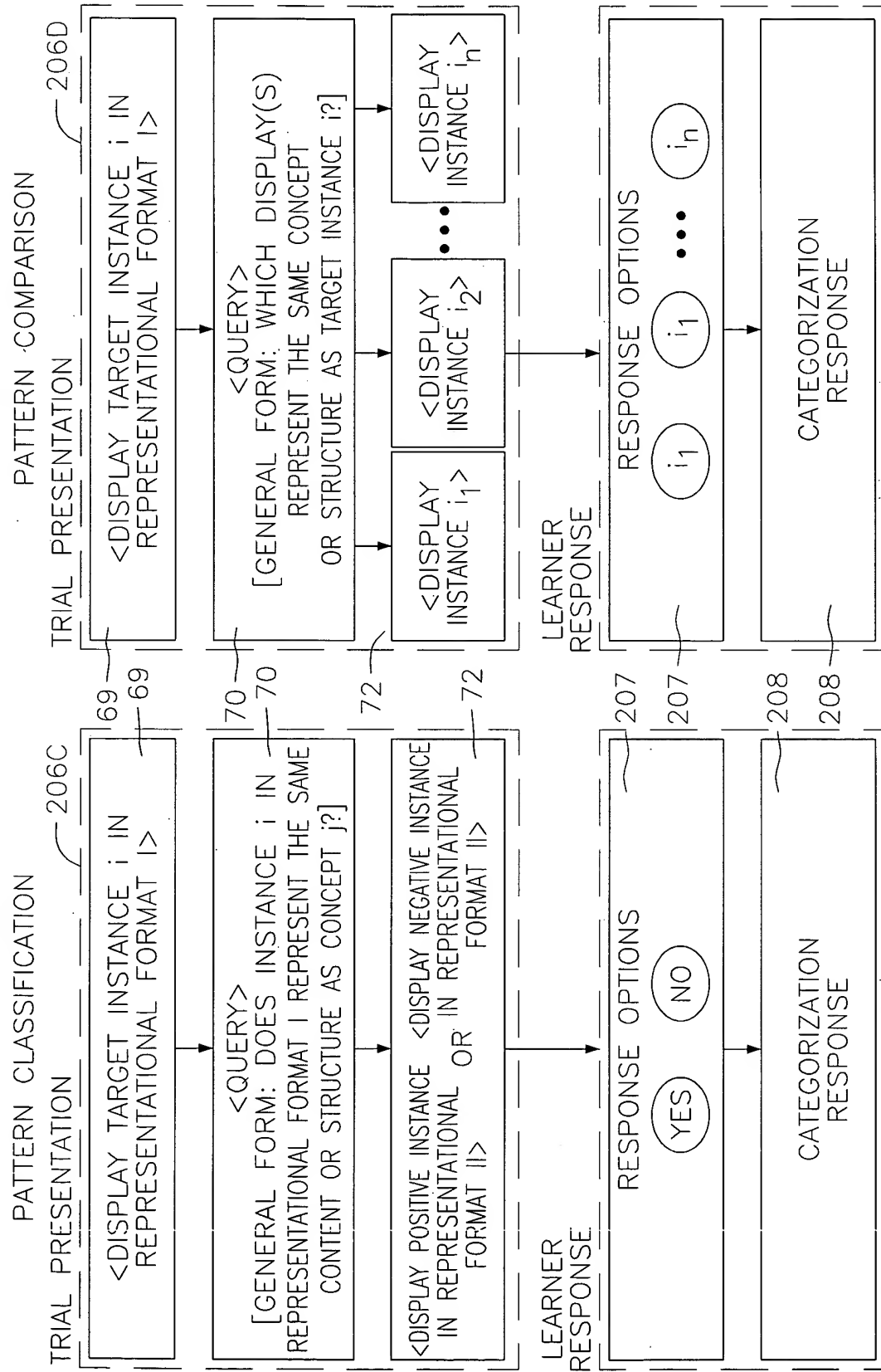


FIG. 9

PERCEPTUAL LEARNING SYSTEM:
STRUCTURE MAPPING VARIANT

PROBLEM PRESENTATION FORMATS—DETAIL



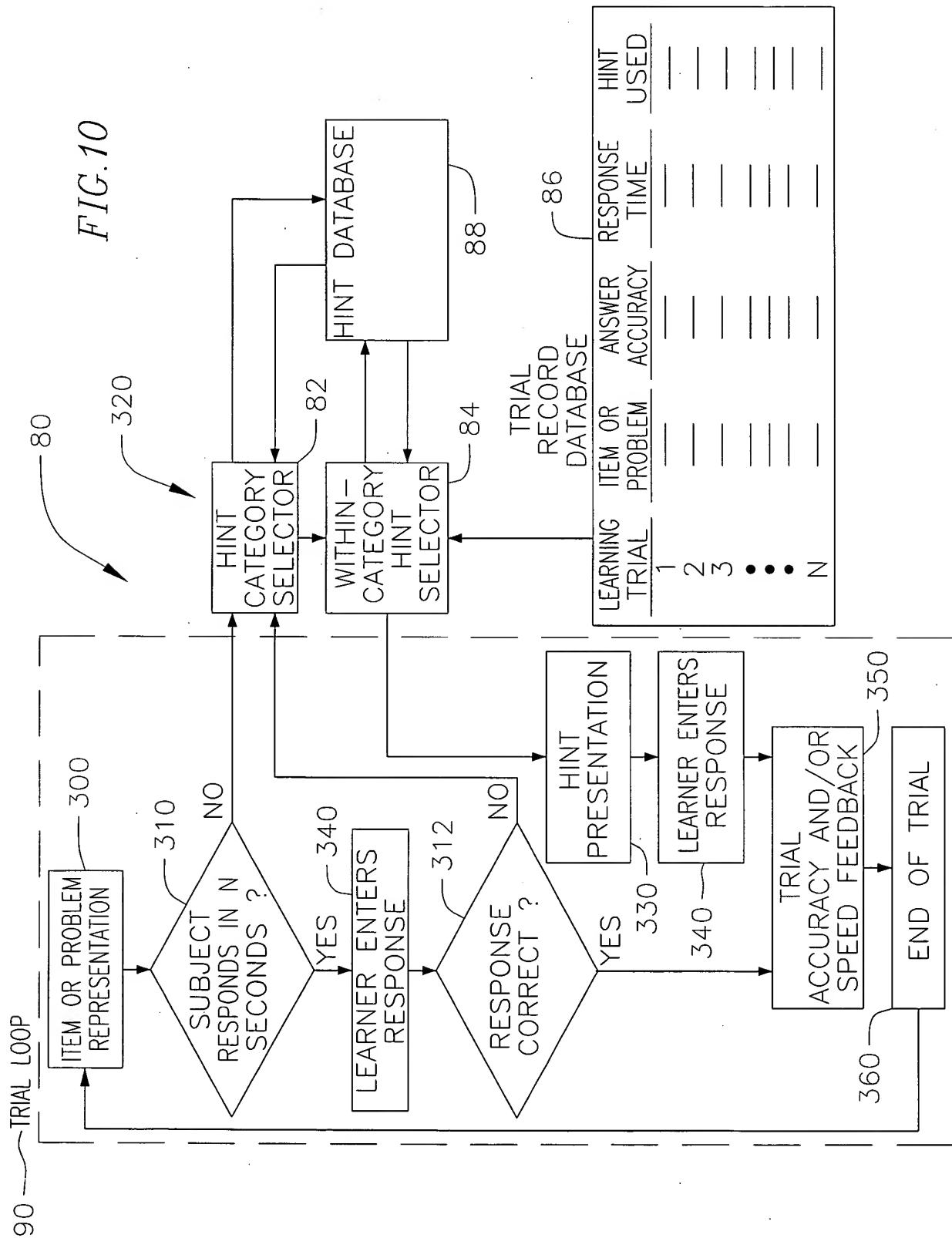




FIG. 11

